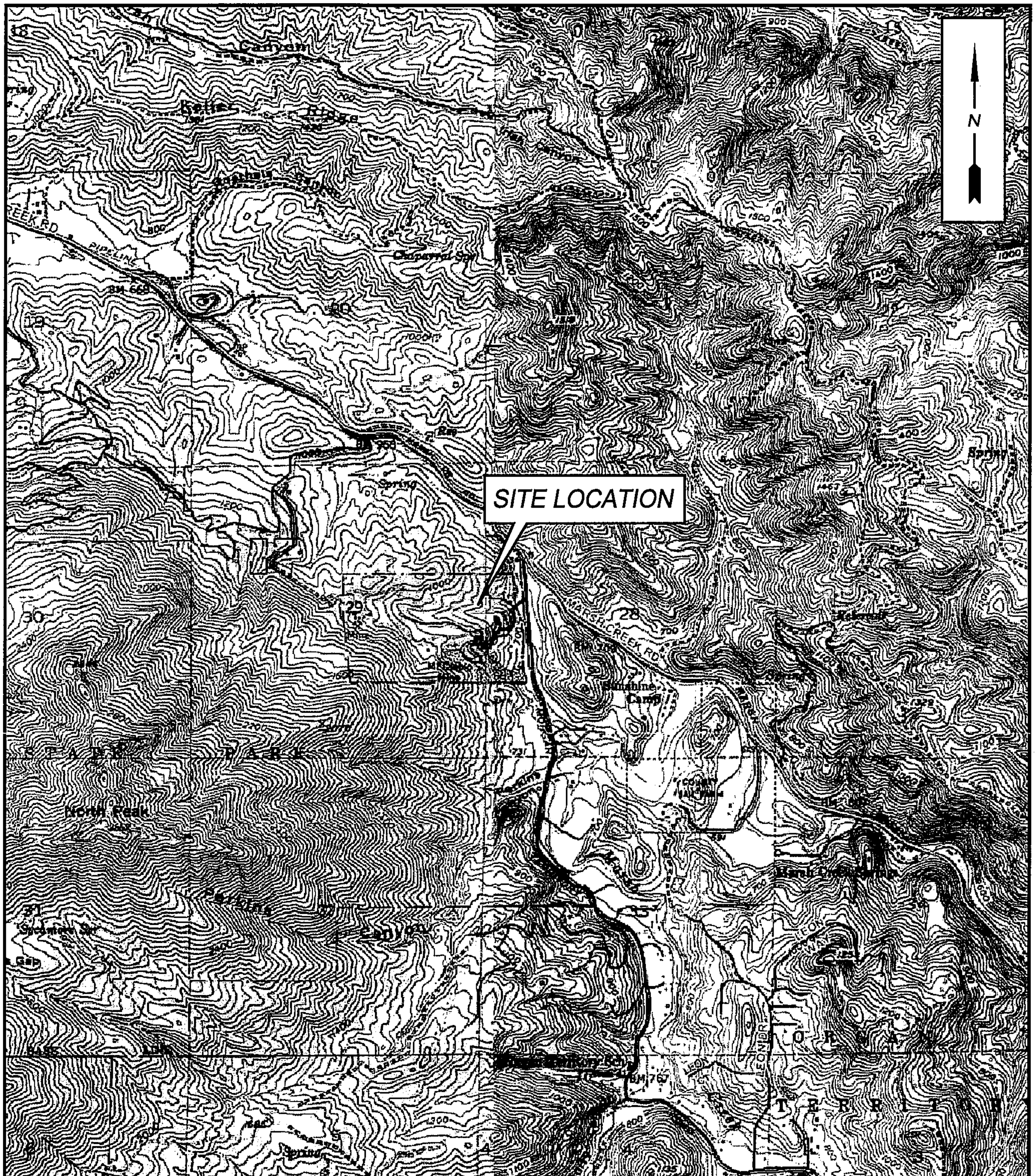
Exhibit 1



SGI environmental — THE SOURCE GROUP, INC.

3451 C VINCENT ROAD
PLEASANT HILL, CA 94523

MAP SOURCE: U.S.G.S.

SCALE: 0 MILES 0.5

SITE LOCATION MAP

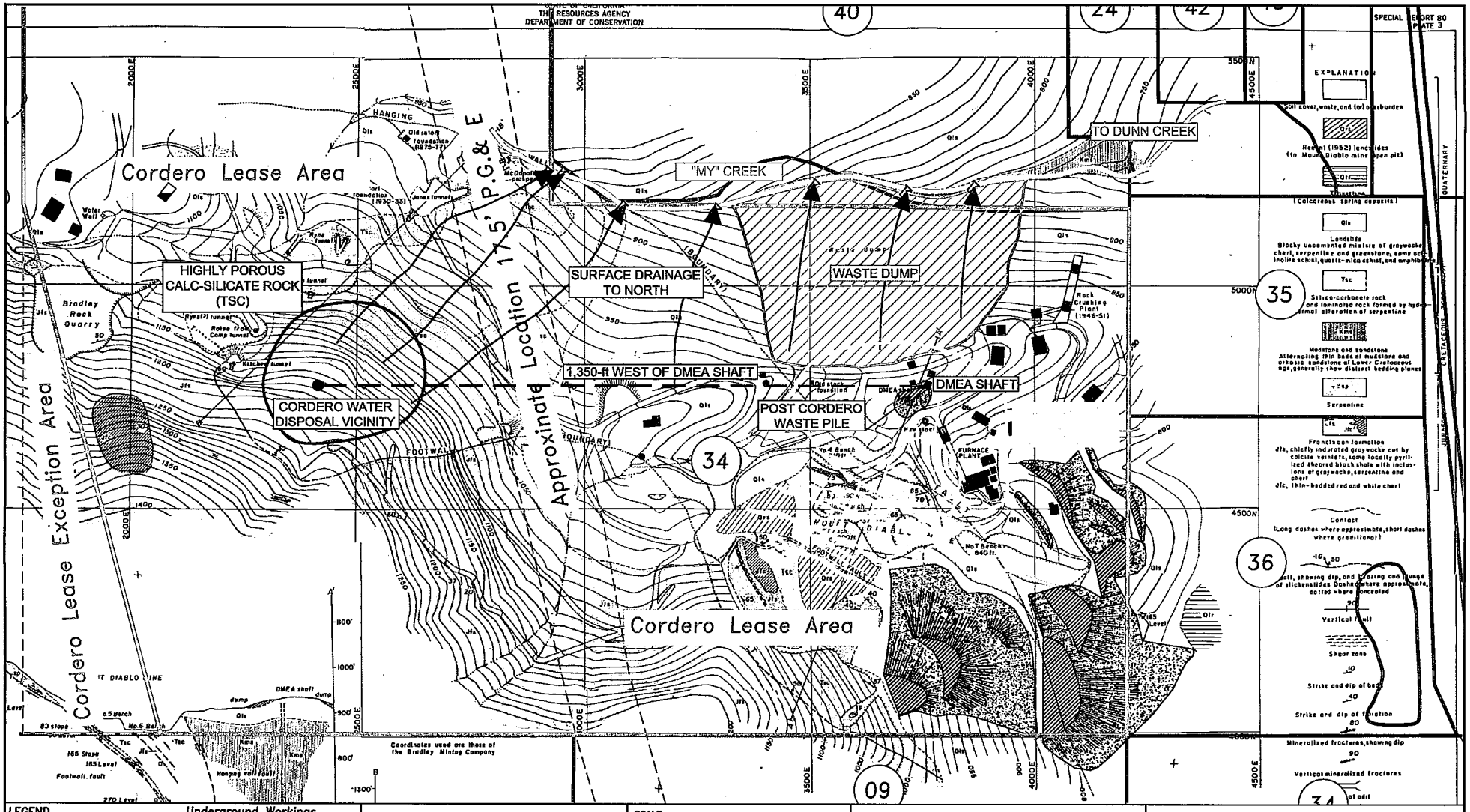
SITE: SUNOCO
MT. DIABLO MERCURY MINE

DATE: 12/05/08

LOCATION: 2430 MORGAN TERRITORY ROAD
CLAYTON, CALIFORNIA

FIGURE: 1-1

Exhibit 2



LEGEND

- Mine Structure (1953)
- Tailings/Waste Rock (Pre Cordero)
- Waste Rock (DMEA/Cordero)

Underground Workings

- Adit Level
- 80-ft Level
- 165-ft Level
- 270-ft Level
- 360-ft Level (Cordero)

SGI environmental
THE SOURCE GROUP, INC.
3451C VINCENT ROAD
PLEASANT HILL, CA 94523

SCALE
0 200 400
SCALE IN FEET

MT. DIABLO MERCURY MINE
CONTRA COSTA COUNTY, CALIFORNIA
(2004 AERIAL)

DMEA MAP SHOWING PRE- AND POST- DMEA/CORDERO MINE FEATURES

FILE NAME	DATE	DR. BY	APP. BY	PROJECT NO.	EXHIBIT
Mine Features Map.dwg	4/14/09	JP	PH	01-SUN-050	2-3

Exhibit 3

MT. DIABLO MINE

RESOLUTION NO 135

RESOLVED THAT THE FOLLOWING REQUIREMENTS GOVERN THE NATURE OF THE DISCHARGE FROM THE MT. DIABLO MINE TO MARSH CREEK BY WAY OF DUNN CREEK:

1. MAXIMUM QUANTITY OF SETTLEABLE SOLIDS IN THE POND EFFLUENT SHALL NOT EXCEED 0.5 ML/LITER AFTER ONE HOUR OF QUIESCENT SETTLING IN A STANDARD IMHOFF CONE;

2 THE POND EFFLUENT SHALL NOT PRODUCE NOTICEABLE COLOR OR PRECIPITATE AFTER 15 MINUTES AERATION;

3 THE POND EFFLUENT SHALL NOT PRODUCE NOTICEABLE COLOR OR PRECIPITATES WHEN PH IS ADJUSTED TO NEUTRALITY (7.0);

4 THE POND EFFLUENT LEAVING THE MINE PROPERTY SHALL HAVE A PH BETWEEN 6.5-8.5;

5 THE POND EFFLUENT SHALL NOT PRODUCE EXCESSIVE COLOR IN MARSH CREEK;

6 THE POND EFFLUENT SHALL NOT CONTAIN ANY TOXIC MATERIALS IN SUCH QUANTITY OR OF SUCH CHARACTER AS TO BE HAZARDOUS TO THE PUBLIC HEALTH OR TO PLANT OR ANIMAL LIFE.

IF, IN THE FUTURE, THERE IS A CHANGE IN THE CONDITIONS OR USE OF THE DISPOSAL AREA OR IN MARSH CREEK, IT MAY BE NECESSARY FOR THE CENTRAL VALLEY REGIONAL WATER POLLUTION CONTROL BOARD TO REVISE THE REQUIREMENTS TO CONFORM TO THE NEW CONDITIONS OR USE.

REGIONAL WATER POLLUTION CONTROL BOARD
CENTRAL VALLEY REGION
STATE OF CALIFORNIA

C. M. Hoskinson
CHAIRMAN

ATTEST:
Joseph A. Sokolowski
EXECUTIVE OFFICER

BASIS FOR REQUIREMENTS

MT. DIABLO MINE RESOLUTION No.____

Marsh Creek and its upper tributaries drain a mountain and hill area of about 40 square miles on, and adjacent to the lower eastern slope of Mt. Diablo, ranging in elevation up to about 3850 feet. The main stream flows for about 17 miles through the mountains and hills and thence across the San Joaquin Valley floor into Dutch Slough near Oakley. Dunn Creek, a small tributary, enters Marsh Creek from the west about 10 miles above its point of emergence from the hills.

Wastes from the Mt. Diablo mine passes through ponds adjacent to Dunn Creek and discharge to the Creek at a point 1500 feet above the confluence of Dunn Creek and Marsh Creek.

This mine waste discharge has been a source of complaint since before the war. The complaints are caused by the drainage water entering Marsh Creek by way of Dunn Creek and causing deposition of iron on the bed of the creek and general discoloration of the creek water. The downstream complaints came from:

1. A Mr. Zuur who thought that his domestic water well was polluted by the mine waste.

2. A resort owner who has dammed the creek for swimming and who says that the mine waste discolors his pool.

3. A series of farmers who have not complained directly to the Board but through the resort owner have indicated their feelings that the mine wastes are affecting the taste of their domestic water wells.

When this matter was first brought to the attention of this office in June 1950, a study was requested from the Department of Public Health to make certain that no danger to the public health exists. The Health Department study indicated that the discharge presented no health hazard. A study was then requested from the Division of Water Resources which is still in progress. The Division reported that while some of the mine discharge was getting into Mr. Zuur's well, the ground water in the area is so poor naturally, especially during the summer months, that the discharge can not be considered as deteriorating the quality of the well to the point where it can be called a pollution.

Representatives of this office and the Division of Water Resources contacted Mr. Zuur and explained in detail the findings.

The Water Resources report also indicates the large concentration of iron in the mine discharge and the relatively low pH. The discharge when it mixes with the natural creek has its pH raised. This rise in pH together with natural aeration cause the iron to be precipitated from solution. The iron is then deposited all along the Creek, causes a coating on the sides of the resort swimming pool and requires an acid wash for its removal.

MT. DIABLO MINE, (Continued)
Basis For R.W.B. (52-27, Res. #135

The farmers complaint that the mine waste damages their wells comes in the same category as Mr. Zuurs complaint. The wells which are in the creek bottom may get some mine waste in them, however, any waste runing by these farms has been diluted many times more than the discharge passing Mr. Zuurs well. Consequently, any discharge getting into these wells are too limited to be classed pollution. The farm wells, which are away from the creek, are in a geologic zone which produces bad water during certain seasons of the year.

There have been several meetings with the mine operators at which time the problem of the discharge was discussed with them and the fact that proper operation of ponds was essential if a pollution or nuisance was to be avoided. This proper operation consists of keeping the ponds cleaned so that there is always maintained adequate holding capacity for settling and to permit discharge during times of high flow in Marsh Creek. The mine people agreed that this method of operation seemed reasonable, however, no progress appears to have been made. The pond is filling up with sediment and it is understood that pond contents are discharged on Sunday nights and produces a slug of highly colored wastes which travels downstream all day Monday. This type of operation makes the people downstream angry at the mine. We have heard several times the statement that if these mine owners would act like they are trying to cooperate things would not be so bad.

The requirements which will be presented, are designed to prevent the precipitation of iron in the creek by aeration and change in pH. The purpose being that this precipitation should take place in the pond where the suspended materials could settle out prior to discharge. It is also essential that the pond be kept clean so that settling capacity be maintained.

One point which has not been raised by any complaints is the possible effect of boron in Marsh Creek. The Water Resources study shows that the mine waste contains boron. However, the ground water in the area also has boron in it. The data we have indicates that the normal concentration of boron runs about 1.0 p.p.m. However, because so few samples were taken our requirements contain only a general statement in regard to "toxic materials of such quantity or of such character as to be hazardous to the public health or to plant or animal life." The continuing sampling program will provide a firmer basis for a definite boron requirement if necessary.

Exhibit 4

RESOLUTION FOR
PUBLIC HEARING

IN THE CASE OF,
MT. DIABLO QUICKSILVER MINE

RESOLUTION No. 53-21 ADOPTED: FEBRUARY 27, 1953

WHEREAS, DRAINAGE FROM THE MT. DIABLO QUICKSILVER MINE OVERFLOWS INTO DUNNE CREEK AND THENCE TO MARSH CREEK; AND

WHEREAS, IN ACCORDANCE WITH SECTION 13053 OF THE WATER CODE THE CENTRAL VALLEY REGIONAL WATER POLLUTION CONTROL BOARD BY RESOLUTION No. 135 DATED MAY 15, 1952, DID PRESCRIBE REQUIREMENTS FOR SAID DISCHARGE AND DID NOTIFY RONNIE SMITH, TRUSTEE OF ITS ACTION; AND

WHEREAS, IT APPEARS TO THIS BOARD THAT RONNIE SMITH OR THE MT. DIABLO QUICKSILVER COMPANY, LTD. OR BOTH ARE DISCHARGING INDUSTRIAL WASTE OR ARE PERMITTING SAME TO BE DISCHARGED, WITHIN THE CENTRAL VALLEY REGION CONTRARY TO SAID REQUIREMENTS;

NOW, THEREFORE BE IT RESOLVED THAT A HEARING SHALL BE HELD PURSUANT TO ARTICLE 3, CHAPTER 4, DIVISION 7, WATER CODE, TO DETERMINE IF A DISCHARGE OF INDUSTRIAL WASTE IS TAKING PLACE CONTRARY TO SAID REQUIREMENTS; AND

BE IT FURTHER RESOLVED THAT THE EXECUTIVE OFFICER OF THE CENTRAL VALLEY REGIONAL WATER POLLUTION CONTROL BOARD BE, AND HE HEREBY IS, AUTHORIZED TO INSTITUTE AND MAINTAIN PROCEEDINGS PURSUANT TO SECTION 13061 OF THE WATER CODE, TO PRESENT EVIDENCE AT THE HEARING THEREON, AND TO ISSUE SUBPENAS IN THE NAME OF THIS BOARD; AND

BE IT FURTHER RESOLVED THAT THIS CASE SHALL BE HEARD BY THE BOARD WITH THE HEARING OFFICER PRESIDING.

CHAIRMAN

ATTEST:

EXECUTIVE OFFICER

REGIONAL WATER POLLUTION CONTROL BOARD
CENTRAL VALLEY REGION
STATE OF CALIFORNIA

Exhibit 5

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. 78-114

WASTE DISCHARGE REQUIREMENTS
FOR
MOUNT DIABLO QUICKSILVER MINE
CONTRA COSTA COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Board), finds that:

1. The Board on 27 February 1953 adopted Resolution No. 53-21 which prescribed requirements for a discharge from Mount Diablo Quicksilver Mine to Dunn Creek.

2. Surface and mineral rights of the mine are presently owned by Jack and Carolyn Wessman.

3. Present waste discharge requirements established by Resolution No. 53-21 are not adequate nor consistent with present plans and policies of the Board.

4. Mount Diablo Quicksilver Mine discharges mine drainage from the mine tailings and overburden to Dunn Creek near its confluence with Marsh Creek a tributary of the San Joaquin River a water of the State.

5. Mount Diablo Quicksilver Mine is located in the NE 1/4, SE 1/4 of Section 29, T1N, R1E, MDB&M (assors parcel #78060008-6) with surface water drainage to Dunn Creek.

6. The beneficial uses of Marsh Creek and Marsh Creek reservoir are: water-contact recreation, non-water contact recreation, freshwater habitat, wildlife habitat, and the preservation of rare and endangered species.

7. The beneficial uses of the groundwater are: domestic supply, irrigation, and stockwatering.

8. The Board, on 25 July 1975, adopted a Water Quality Control Plan for the Sacramento-San Joaquin Delta Basin.

9. Mining operations ceased in 1971, however, the mine area continues to discharge mineralized water and sediment to Dunn Creek.

10. The action to revise waste discharge requirements for this facility is exempt from an environmental review in accordance with Sections 15101, 15107, and 15108 of the CEQA regulations.

11. The Board has notified the discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge.

12. The Board in a public meeting heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, that Resolution No. 53-21, be rescinded and Jack and Carolyn Wessman shall comply with the following:

A. Discharge Prohibitions:

1. The direct discharge of wastes to surface waters or surface water drainage courses is prohibited.

2. Previously deposited sediment in the reservoir shall not be discharged.

B. Discharge Specifications:

1. The discharge shall not cause a pollution or nuisance as defined by the California Water Code.

2. The discharge shall not cause degradation of any water supply.

3. The discharge shall remain within the designated disposal area at all times.

4. The discharger shall implement erosion control practices to minimize erosion of mine overburden and worked areas.

C. Provisions:

1. The discharger may be required to submit technical or monitoring reports as directed by the Executive Officer.

2. The discharger shall follow the following time schedule to comply with discharge prohibition A1:

Action	Compliance Date	Compliance Report Due
Conceptual Plan	1 Nov 1978	15 Nov 1978
Complete Construction Plan	1 Jan 1979	15 Jan 1979
Begin Construction	1 Apr 1979	15 Apr 1979
Progress Construction Report	1 Jun 1979	15 Jun 1979
Full Compliance	1 Jul 1979	15 Jul 1979

3. The discharger shall follow the following time schedule to comply with Provision A.2:

	Due:
Submit Conceptual Plan	15 Sept 1978
Complete Construction	1 Nov 1978

4. The discharger shall report promptly to the Board any material change or proposed change in the character, location, or volume of the discharge.

5. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the discharger, the discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be forwarded to this office.

6. Any diversion from or bypass of facilities necessary to maintain compliance with the terms and conditions of this Order is prohibited, except (a) where unavoidable to prevent loss of life or severe property damage, or (b) where excessive storm drainage or runoff from any event having a return frequency greater than one in twenty-five years ($\geq$ 3.9 inches/day [9.9 cm/day]) would damage any facilities necessary for compliance with effluent limitations and prohibitions of this Order. The discharger shall notify the Board in writing within two weeks of each such diversion or bypass including documentation of the storm intensity.

7. The Board will review this Order periodically and may revise requirements when necessary.

I, JAMES A. ROBERTSON, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 8 September 1978

Original signed by
James A. Robertson

JAMES A. ROBERTSON, Executive Officer

CH/ap 7/25/78

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. 78-114
FOR
MOUNT DIABLO QUICKSILVER MINE
CONTRA COSTA COUNTY

RESERVOIR MONITORING

A grab sample of the impounded water shall be collected during November of each year. The sample shall be collected at a point where a representative sample can be obtained. The sample shall be analyzed for the following:

Constituents	Units
Specific Conductivity	µmhos/cm
pH	units
Copper	mg/l
Iron	mg/l
Manganese	mg/l
Zinc	mg/l

In addition, a monthly report shall be submitted for the months November through March inclusive detailing:

1. The distance from the water surface to the spillway (freeboard).
2. The condition of the containment dikes.
3. The condition of the up watershed diversion berms.

REPORTING

In reporting the monitoring data, the discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner to illustrate clearly the compliance with waste discharge requirements. Monitoring shall commence not later than 30 November 1979, unless otherwise specified.

Monthly monitoring reports shall be submitted to the Regional Board by the 15th day of the following months: December through April.

MONITORING AND REPORTING PROGRAM
MOUNT DIABLO QUICKSILVER MINE
CONTRA COSTA COUNTY

If the discharger monitors any pollutant at the locations designated herein more frequently than is required by this order, he shall include the results of such monitoring in the calculation and reporting of the values required in the Discharge Monitoring Report Form. Such increased frequency shall be indicated on the Discharge Monitoring Report Form.

Ordered by W. H. Crooks for
JAMES A. ROBERTSON, Executive Officer

1 August 1979
(Date)

CAH/gs 2/23/79

MOUNT DIABLO QUICKSILVER MINE

CONTRA COSTA COUNTY

Claton and Antioch South Quads.
Scale 1"=2000'

MOUNT DIABLO QUICKSILVER MINE
CONTRA COSTA COUNTY

The Mount Diablo Quicksilver Mine is on the east slope of Mount Diablo in Contra Costa County. The mine was operated intermittently from 1870 to 1970 when operation ceased and it was sold. Surface and mineral rights of the mine are presently owned by Jack and Carolyn Wessman.

Discharge from the mine is currently governed by Resolution No. 53-21 adopted by the Board on 27 February 1953. Drainage from the mine property flows to Dunn Creek thence to Marsh Creek, a tributary of the San Joaquin River.

During the operational life of the mine, drainage was contained in an earthen diked reservoir. This reservoir is now nearly filled with sediment that was trapped through the years.

The recent wet season resulted in the dike washing out and large quantities of sediment being deposited downstream. Mine drainage continues to flow through the ruptured dike and when it combines with other springs in the area and Dunn Creek a red-brown flock is formed. The red-brown flock and sediment can be seen coating the stream bottom of Dunn Creek and Marsh Creek for approximately one mile downstream.

The revised requirements require immediate corrective work to stabilize sediment behind the dike and provide a time schedule for permanent corrective action by 15 July 1979.

CH/ap 7/25/68

Exhibit 6

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

CLEAN-UP AND ABATEMENT ORDER FOR MOUNT DIABLO QUICKSILVER MINE CONTRA COSTA COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Board), finds that:

1. The Mount Diablo Quicksilver Mine was operated intermittently from 1870 to 1970. It is now owned by Jack and Carolyn Wessman. Surface water drainage from the site is to Dunn Creek thence to Marsh Creek a tributary of the Sacramento-San Joaquin Delta.

2. The Board on 8 September 1978 adopted Waste Discharge Requirements, Order No. 78-114 which includes Discharge Prohibition A.1. "The direct discharge of waste to surface waters or surface water drainage courses is prohibited", and A.2. "Previously deposited sediment in the reservoir shall not be discharged".

3. On 13 July 1978 staff conducted an inspection in company with representatives of the Department of Fish and Game and Mr. Jack Wessman. During this inspection, Mr. Wessman indicated that he would divert springs polluted by overburden material from the mine around the storage reservoir through which they presently flowed. The Department of Fish and Game and staff agreed that this work should not be done and so informed Mr. Wessman.

4. The Department of Fish and Game in a letter dated 18 August 1978 found the discharge from the mine property to be "extremely lethal" to aquatic life.

5. A staff inspection conducted 3 August 1978 revealed that Mr. Wessman had diverted the polluted springs from the mine around the storage reservoir.

6. The diverted springs constituted a point source discharge of pollutants for which no NPDES permit has been obtained or applied for.

7. Mr. Wessman submitted a conceptual plan to comply with Discharge Prohibition A.2 dated 24 October 1978. The compliance date as stated in the requirements was 15 September 1978.

8. Construction, as per the submitted conceptual plan, was to be complete by 1 November 1978. To date no work has been performed.

9. Waste Discharge Requirements require a conceptual plan to comply with Discharge Prohibition A.1 by 15 November 1978. On 15 November 1978, Mr. Wessman indicated, by phone, that he would not comply with this provision.

10. There is great potential for further degradation of Dunn Creek and Marsh Creek during the upcoming wet season. Winter rains may result in the discharge of large quantities of sediment and increase the volume of discharge of acidic water from the mine property.

11. Section 13304 (a) of the California Water Code provides that "Any person who... intentionally or negligently causes or permits any waste to be discharged or deposited where it is, or probably will be discharged into waters of the State and creates or threatens to create, a condition of pollution or nuisance shall upon order of the regional board clean-up or abate the effects thereof or, in the case of threatened pollution or nuisance, take other necessary remedial action.....".

12. Issuance of this Order is exempt from the provisions of the California Environmental Quality Act (Public Resources Code Section 21000, et seq.) in accordance with Section 15121, Chapter 3, Title 14, California Administrative Code.

IT IS HEREBY ORDERED, that pursuant to California Water Code Section 13304, the Mt. Diablo Mine, owned by Jack and Carolyn Wessman, shall:

1. By 30 November 1978 redivert the springs from the mine overburden and other worked areas of the mine back to the storage reservoir to abate further direct discharge.

2. By 30 November 1978 complete the repair of the storage reservoir so as to comply with Discharge Prohibition A.2 of Order No. 78-114.

3. Comply with the time schedule presented in Provision C.2 to insure compliance with Discharge Prohibition A.1 of Order No. 78-114.

DATED: 20 November 1978

Ordered by JAMES A. ROBERTSON, Executive Officer

CAH/gs

SUMMARY OF STAFF CONTACTS, MOUNT DIABLO MINE

1.	13 July 1978	Made inspection of mine. Present were Chris Haynes, Richard Rose, Mike Rugg (DFG), Tom Kasnic(DFG) and Mr. Wessman (owner). Told Mr. Wessman not to divert the springs.
2.	20 July 1978	Sampled drainage from the overburdan and surrounding watershed.
3.	3 August 1978	Inspected mine, present were Jim Parsons (State geologist), Chris Haynes and Mr. Wessman. Discussed Tentative Requirements briefly.
4.	9 August 1978	Inspected mine for possible control measures, present were Chris Haynes, Bob Roan, and Bill Morgan(SCS)
5.	8 September 1978	Requirements adopted by the Board.
6.	2 October 1978	Spoke with Mr. Wessman by phone to discuss WDR and compliance dates.
7.	10 October 1978	Spoke with Mr. Wessman by phone about compliance dates and contents of his plans.
8.	3 November 1978	Called Mr. Wessman to give our reluctant acceptance of his conceptual plan and our comments; letter sent that same day. Told him we believe that his plan would hinder runoff control efforts.
9.	14 November 1978	Inspection made; no work completed; found in violation of WDR.
10.	15 November 1978	Spoke with Mr. Wessman by phone. He stated that work will be complete by 28 November 1978. He has no intention of doing any additional work to comply with Discharge Prohibition A.1.

MEMORANDUM

TO: Richard Rose
FROM: Chris Haynes
SUBJECT: Mount Diablo Quicksilver Mine

On 15 November 1978, I received a call from Mr. Wessman. He said that his contractor would be starting work on 24 November 1978. Our requirements are that work should be completed by 1 November 1978. At this point we have no assurance that Mr. Wessman has actually hired a contractor. It is Mr. Wessman's intention to complete the work as per the submitted conceptual plan without consideration of our comments.

I asked about the conceptual plan for the containment of all surface drainage, due 15 November 1978. Mr. Wessman stated that he has no intention of submitting any further plans for the site. He does not have any intention of complying with Discharge Limitation A.1. Our efforts to control the discharge will be hindered by the work which Mr. Wessman proposes.

Mr. Wessman mentioned that he would be spending $10,000 (seems a bit high) for the required work. I believe that the work required for the containment of the sediment would take only one day with a D-8 "CAT". Ted Fenner of this office recently used a "CAT" at Penn Mine for a total cost of $950 for two days. My estimate is $1000, somewhat less than Mr. Wessman's.

Chris A. Haynes

CHRIS A. HAYNES
Staff Engineer

CAH/gs 11/17/78

cc: DFG, Region III, Mike Rugg
SWRCB, Legal, Buck Taylor
Mr. Jack Wessman

Enclosure

MEMORANDUM

TO: Richard Rose
FROM: Chris Haynes
SUBJECT: Mount Diablo Mine

On 14 November 1978, I inspected the subject facility to ascertain compliance with Board Order No. 78-114. The inspection was made alone.

No work had been accomplished to comply with Discharge Prohibition A.2. This work was to be complete by 1 November 1978. Drainage from the mine overburdan was flowing directly to Horse Creek thence Dunn Creek. The drainage was completely by-passing the storage reservoir. Pictures were taken and will be incorporated into the file. There appeared to be more sediment in Dunn Creek than was observed in my last inspection. The flows from the overburdan material and other worked areas had increased as a result of our recent rains.

I find the subject mine not in compliance with Board Order No. 78-114, Dicharge Prohibition A.2. that states:

> "A.2 Previously deposited sediment in the reservoir shall not be discharged."

Chris A. Haynes

CHRIS A. HAYNES
Staff Engineer

CAH/gs 11/17/78

cc: DFG, Region III, Mike Rugg
SWRCB, Legal, Buck Taylor
Mr. Jack Wessman

Not sent

Exhibit 7

5643 Telegraph Avenue
(Phone Olympic 2-6231)
Oakland 9, California
March 19, 1950

Mr. John Longwell, Chairman,
Water Pollution Board,
512 - 16th Street,
Oakland, California.

Dear Mr. Longwell:

I wish to call your attention to the pollution of a stream which flows through my property and which is causing considerable damage now, and has the potentiality of causing greater difficulties in the future, not only to myself but to my neighbors and possibly to the water supply of a city. I have made vain appeals, personally and through an attorney, to the responsible parties, and would greatly appreciate any action that the Water Pollution Board might take in this matter for the benefit of the State of California as well as myself.

The nuisance arises from the former operation of the Diablo Quicksilver Mine and the present operation of a rock quarry on the same site. This mine is located at the junction of the Livermore Road and Marsh Creek Road about eight miles southeast of Clayton, Contra Costa County (southwest quarter of Section 28, township 1, North Range 1 East, Mount Diablo Base and Meridian - see enclosed map). The mine is owned by the Bradley Mining Company whose main office is located at 425 Crocker Building, San Francisco.

In past years all the mining by-products were allowed to flow unimpeded into Marsh Creek, killing many beautiful large trees along its banks. A limited amount of legal action was taken by property owners and a feeble attempt was made to retain the debris on the mine property, alleviating the situation temporarily. If the present condition continues unabated, however, it is possible that in the near future many more trees along Marsh Creek will be killed by the poisonous water from the mine. This contamination makes my well water and my neighbors' well water unfit for human or animal consumption during the summer months.

The main causes of this stream pollution are as follows:

1. Very fine silt and mineral salts are picked up by water percolating through large piles of mining and quarry debris, and this material is deposited along the creek below the mine.
2. Interior deposition of minerals in the old mine shafts is seeping out into the stream and being deposited along the creek bed.
3. A black substance having a high sulphuric acid content is being let out of the mine premises and allowed to flow downstream.

This combination of silt, mineral salts, and sulphuric acid water has filled in a number of spots along the creek bed to a depth of one foot, and the entire creek bed is coated with a milky residue. The stream itself is discolored by the residue held in suspension until it settles in the quieter pools.

A dam was constructed to hold back this material, but the fine silt flows through the many leaks in its base, and over the spillway, which is located at the end of the dam nearest the mine and directly below a pile of debris, thus enabling silt, salts, and acid water to flow into the stream which by-passes the dam.

The mine owners contend that the pollution is the natural flow of a mineral spring which previously ran through the site of the present mine shafts, and that its flow is not their responsibility. They do not account for the silt. This mineral spring is shown on the first survey map made of this region, in 1867, and is designated by the surveyor as a soda spring, but not as having any detrimental effects on the other streams or the vegetation. This area (the old Morgan Territory) is well known to have abounded with fish and game in the last century, as testified, for example, by the "History of Contra Costa County" published by W. A. Slocum & Company, San Francisco, in 1882. No fish could survive this stream in its present state of pollution, which I believe to be the direct result of the mining operations and the responsibility of the owners of the mine.

I am sure that the Water Pollution Board, if it considers this case, can make recommendations that will enable the mining company to see its way clear to construct the necessary safeguards and thereby save one of Contra Costa County's scenic areas from being marred by stream pollution. I shall be glad to cooperate with you, of course, in investigating this matter.

Yours very truly,

Theodore A. Zuur

Theodore A. Zuur.

November 29, 1951

State Water Pollution Control Board
305 Financial Building
927 10th Street
Sacramento 14, California

Gentlemen:

This will acknowledge your letter requesting information in regard to possible pollution of the shallow wells on the property of Mr. Theodore Zumr, by the discharge from the Mt. Diablo Quicksilver Mine.

This matter has been under investigation by this office since the spring of 1950.

At that time the State Department of Public Health made an investigation for the Central Valley Board and came to the conclusion that no health hazard was involved. The Division of Water Resources was requested in August of 1950 to conduct a water pollution survey. Although the Division of Water Resources has not yet completed its report, the preliminary findings show that because of the poor quality of the water naturally occurring in the area, it is impossible at this time to show that the mine waste discharge is deteriorating the quality of the water in the wells to the point where it can be classed as a pollution.

The mine has not been operating for the past several years, but is now being put in operating condition and further investigation will be made to determine the effects of waste material on the local ground water situation and on Marsh Creek.

Since being informed that the mine is reopening, the staff has contacted the mine operator Mr. Ronnie E. Smith of Dallas, Texas, and Mr. Blumberg, the Mine Superintendent, several times, and has discussed with them the waste discharge situation. The operators have been informed of the Boards intention to set requirements on the mine discharge at its next regular meeting calculated to prevent deposition of mining debris and precipitates in the creek bed. They, in turn, have assured the staff that they will do everything necessary to prevent a pollution and to maintain good relations with their neighbors.

Mr. Zumr has been kept informed of our meetings with the mine owners and the progress which has been made. The staff has also explained to Mr. Zumr in detail, the studies and investigations which have been made.

Mr. Zuur has stated that he greatly appreciates the thorough study given this matter. Mr. Zuur has also been assured by the staff of our continuing surveillance of this discharge and of the Board's intention to set requirements.

Final disposition will be made in this case as soon as the effects of of the increased discharge from the reopened mine and the control measures established by the mine management can be evaluated.

Yours very truly

Joseph S. Gorlinski
Colonel, USA. (Ret.)
Executive Officer

A. F. BRAY, JR.
JOHN F. BALDWIN
ATTORNEYS AT LAW
630 COURT STREET
MARTINEZ, CALIFORNIA
TELEPHONE 2550

Dear Colonel Holindrake:

Since you will probably want to have it in advance of our meeting until you Friday, Feb 20, at 1:30 p.m., I am enclosing the attached formal complaint against the Mt. Diablo Quicksilver Mine discharge into Marsh Creek.

Mr. McBride, who is Chief Deputy District Attorney of Contra Costa County, together with Mr. Gerald Gill, one of the property owners on Marsh Creek, and I will all come to Sacramento to meet with you on Friday.

Sincerely
John F. Baldwin

D. M. Teeter
County Administrator
Court House
Martinez

Bureau of Sanitary Engineering
Department of Fish and Game
Division of Water Resources

April 11, 1951

Regional Water Pollution Control Board #5

Tentative requirements for the Mt. Diablo Mine, Contra Costa County.

The following conditions were taken into consideration in setting tentative requirements for the Mt. Diablo Mine in Contra Costa County.

The discharge, in the past, has caused complaints because of excessive dis-coloration of the water and because of deposits left in the bed of the creek downstream from the mine property. The waste discharge originated from springs, and natural runoff which percolates through tailings dumps together with water resulting from the mine operations. The previous operators constructed a dam to store the drainage waters and permit settling of suspended or precipitated materials before discharging the waters into the Creek. The dam allows impoundment of the waste waters during low stream flows and permits discharge of the stored waters to the creek during periods of high stream flows. Because of mechanical difficulties full operation of this system did not operate. Several inspections of this discharge were made by Regional Board personnel and surveys were requested from the State Department of Public Health and of the Division of Water Resources in connection with possible contamination or pollution of a private well downstream from the mine. The State Department of Public Health has stated that no health hazard existed in the discharge at the time of its survey (June 1950). However, recent samples by the Division of Water Resources indicate the presence of arsenic in the mine discharge. The State Division of Water Resources has stated that it is impossible at this time to show that the discharge from the mine property has affected the quality of the well to the point where it can be classed as a pollution.

The creek receiving the mine discharge flows through private property below the mine and there is evidence of precipitated iron and other materials deposited in the creek bed causing an unsightly condition. Inspection along the creek leaves no question but that the flow from the mine dam is the source of these deposited materials.

The water of Marsh Creek is little used downstream from the mine. In one place a resort owner has dammed up the creek and has made a natural swimming pool. While there is little or no flow during the summer months storage, together with a recirculation system provides water for the pool operation.

There is no known use of Marsh Creek water for irrigation purposes. Consequently, although boron is present in the waste it is not believed to be critical at this time.

Must be appears in final letter

It is the intent of the Regional Board to prevent the nuisances or pollution which accompany the deposits of highly colored and unsightly materials into a public stream.

With the above in mind, I intend to recommend that the Regional Board adopt the following requirements to govern the nature of the discharge from the Mt. Diablo Mine:

REQUIREMENTS:

1. Maximum quantity of settleable solids in the pond effluent shall not exceed 0.5 ml/ liter after one hour of quiescent settling in a standard Imhoff cone;

2. The pond effluent shall not produce noticeable color or precipitate after 15 minutes aeration;

3. The pond effluent shall not produce noticeable color or precipitates when pH is adjusted to neutrality (7.0);

4. The pond effluent leaving the mine property shall have a pH between 6.5 - 8.5;

5. The pond effluent shall not produce excessive color in Marsh Creek;

6. The pond effluent shall not contain any toxic materials in such quantity or of such character as to be hazardous to the public health or to plant or animal life.

If, in the future, there is a change in the conditions or use of the disposal area or in Marsh Creek, it may be necessary for the Central Valley Regional Water Pollution Control Board to revise the requirements to conform to the new conditions or use.

It will be greatly appreciated if you would submit any comments you may have concerning the above to this office as soon as possible as I plan to submit this case to the Regional Board at its next meeting. In the interest of saving time, it would be preferable if you could submit your comments by telephone and confirm them in writing later.

A. F. BRAY, JR.
JOHN F. BALDWIN
ATTORNEYS AT LAW
630 COURT STREET
MARTINEZ, CALIFORNIA
TELEPHONE 2550

February 17, 1953

Colonel Joseph S. Gorlinski
Executive Officer
Central Valley Regional
Water Pollution Control Board
608 - 13th Street
Sacramento 14, California

Dear Colonel Gorlinski: Re: Marsh Creek

The Central Valley Regional Water Pollution Control Board, at its regular meeting on 15 May, 1952, adopted resolution number 135 establishing requirements for the waste discharge from the Mt. Diablo Quick Silver Mine. This discharge proceeds into Marsh Creek by way of Dunn Creek.

On behalf of the following property owners along Marsh Creek I hereby submit a complaint that the above mentioned resolution is being violated by the Mt. Diablo Quick Silver Mine. These property owners are as follows: Edward Peter Pippo, Catherine Jeanette Pippo, Vernon Robert Cakebread, Frances Jessie Cakebread, John Arata, Jeanne Arata, Mike Arata, Joseph DeVerre, Walter William Foskett, Norma Finney Foskett, Robert Allen Foskett, Loraine Foskett, John Phillip Zuur, Laurie Jean Zuur, Theodore A. Zuur, Remy G. Zur, Joe Freitas, Minne Freitas, Joe Freitas, Jr., Betty Freitas, William Henry Murphy, Lydia Murphy, James C. Murphy, Evelyn I. Murphy, Angelo Anselmo, Fred V. Hanson, Lena Hanson, John P. Silva, Laura P. Silva, Ginochio Brothers by John Ginochio, Jr., Gerould L. Gill, Verna Gill and Donald Ross Gill. The pond effluent from the Mt. Diablo Quick Silver Mine is now producing an extremely noticeable and excessive color in Marsh Creek, which is effecting all of the wells in the creekbed, and is making it impossible to use the creek for swimming purposes.

The County of Contra Costa has indicated it desires to join with us in this complaint, as it owns property on Marsh Creek upon which the County Prison Farm is located, and upon which one or two wells exists. This letter is therefore also signed by the District Attorney of Contra Costa County on behalf

of said county.

We hereby make a request that the Central Valley Regional Water Pollution Control Board take immediate action under Water Code Section 13063 to certify facts to the District Attorney of Contra Costa County as to the violation of the aforesaid order, so that an injunction suit can be brought by said District Attorney against the Mt. Diablo Quick Silver Mine.

We shall very much appreciate immediate action on this request, as the situation is urgent.

Sincerely yours,

John F. Baldwin

JOHN F. BALDWIN

County of Contra Costa

By Laurence W. Collins
District Attorney

By Thomas Faulkner
Assistant

Exhibit 8

ACTIVITY REPORT
MT. DIABLO MINE

I met with Mr. Blomberg at the Mt. Diablo Mine. The company has secured a government loan and is in the process of sinking a new shaft east of the present workings. The only work which has been done for pollution control was to raise the main dam about 2 feet and to widen the bypass for Dunn Creek, although the channel is blocked in one place and cannot carry any water in its present state. The overflow vein from the main dam has been filled in and must be cleared out to be of any use. Blomberg said that Mr. Smith is selling the lease to a man named Jones. Mr. Blomberg was in court a few weeks ago because of a dump slide into the creek. Mr. Blomberg says his plans are to sink the shaft which is now being worked on. He says when the connection is made with the old workings all the water will drain to this new shaft and some of the springs will dry up. Then he proposes to collect all this water into a series of checks,add lime, permit sedimentation and to discharge the supernatant to the dam for more sedimentation and then to the creek. As we have told Mr. Blomberg many times before this is probably the answer. He says he will have this system in before spring. He said the smelter in the bay area will buy any iron he produces if he can concentrate it to 50% iron. He estimated it would cost about $40.00 per day to operate the liming setup.

The government engineer who made the report for the government loan said in his report that the water problem should be solved. The report suggests that 2 government engineers, 2 state engineers and 2 engineers hired by the mine get together to work out a solution.

11-3-53 AJI

ACTIVITY REPORT

MT. DIABLO MINE

TALKED TO VIC BLOMBERG. NO NEW WASTE DISPOSAL FACILITIES HAVE BEEN INSTALLED. THE MAIN POND WAS QUITE LOW. MR. BLOMBERG SAID THAT THE POND HAD BEEN DRAINED DURING THE LAST RAIN. MR. BLOMBERG SAID THAT RONNIE B. SMITH GAVE UP THE LEASE AND A NEW LESSEE IS ON THE SCENE. MR. JOHNSON AND MR. JONAS. THE NEW SHAFT IS DOWN OVER 300 FEET AND THE OPERATORS HAVE STARTED THE DRIFT TO THE ORE BODY. MR. BLOMBERG SAID THAT WHEN DRAINAGE PUMPING STARTS ALL THE SPRINGS WILL DRY UP. HE SAID THAT THE NEW OPERATORS ARE GOING TO LIME THE DRAINAGE WATER AND WILL PUMP THE WATER OUT OF THE SHAFT UP THE SIDE OF THE HILL FOR AERATION. PUMPING OUGHT TO START IN A MONTH.

HE HASN'T HEARD FROM THE GOV'T. ENGINEER WHO RECOMMENDED A BOARD OF ENGINEERS TO STUDY THE WASTE DISPOSAL PROBLEM.

PHIL COFFEY AND ONE OTHER WATER RESOURCES MAN WAS TAKING SAMPLES DOWNSTREAM AND UPSTREAM FROM THE MINE.

A.J.I. FEB. 5, 1954

ACTIVITY REPORT

MT. DIABLO MINE

SAW VIC BLOMBERG. MINE IS STILL SHUT DOWN BY THE DIVISION OF INDUSTRIAL SAFETY. BLOMBERG SAID THAT JOHNSON AND JONAS HAVE CANCELLED THEIR LEASE. NOW SMITH HAS 30 DAYS TO TAKE OVER THE LEASE HIMSELF. IF SMITH DOES NOT TAKE THE LEASE, HE IS IN DEFAULT AND HAS NO FURTHER CONNECTION WITH THE MT. DIABLO OPERATION. THEN, BLOMBERG SAYS, THE BRADLEYS MAY TAKE OVER THE MINE. MERCURY IS SELLING FOR $265 PER FLASK WHICH IS THE HIGHEST PRICE EVER RECORDED. BLOMBERG SAYS THAT IF THEY START TO REOPEN THE MINE THEY EXPECT TO BE IN OPERATION THIS SUMMER. HOWEVER IN THE GOVERNMENT LOAN IS A 5000 ITEM TO INSTALL LIME EQUIPMENT. BLOMBERG SAYS THAT THIS IS POLLUTION CONTROL BUT I THINK THAT THE LIMING IS TO CONTROL CORROSION OF THE PUMP AND PIPE. HOWEVER BLOMBERG BAYS THAT HE WILL PUMP THE MINE WATER UP THE SIDE OF THE HILL AND PROVIDE AERATION.

THE POND IS FULL AND THERE IS SEEPAGE FROM THE TUNNEL AND SEEPAGE FROM THE DUMP. BLOMBERG SAYS EVAPORATION WILL KEEP POND FROM OVERFLOWING. THE CREEK LOOKS VERY GOOD. AT ZUUR'S PLACE THE CREEK LOOKS VERY CLEAN. MARSH CREEK IS NOW DRY ALTHOUGH DUNN CREEK IS FLOWING. THE COUNTY IS DIGGING GRAVEL OUT OF THE CREEK NEAR ZUUR'S AND HE SAYS THAT THEY ARE GOING TO RE-ROUTE THE CREEK SO THAT DUNN CREEK WILL NOT GET NEAR HIS WELL. ZUUR SAYS THE WELL WATER IS NOW GOOD BUT THAT IT'S GETTING BAD.

THE MINE IS FULL OF WATER AND WILL HAVE TO BE PUMPED BEFORE IT CAN GO INTO OPERATION. BLOMBERG SAYS THAT RATE WILL BE ABOUT 100 TO 150 GALLONS PER MINUTE. HE SAYS HE WILL DISCHARGE THE WATER TO THE GROUND ON THE SIDE OF THE MINE AND ALL THE WATER WILL SEEP INTO THE GROUND.

SAW GIL. HE HAD NO COMMENTS TO MAKE.

INERFIELD MAY 25, 1954.

MT. DIABLO MINE:

VISITED MT. DIABLO MINE AND WAS SHOWN THE WASTE DISPOSAL INSTALLATION. THE WATER IS PUMPED OUT OF THE SHAFT IS AERATED BY PASSING OVER A FEW RIFFLES AND THEN GOES TO A SHALLOW POND. HERE SOME OF THE ION PRECIPITATES AND SETTLES. THE SUPERNATANT IS PICKED UP AND PUMPED THROUGH A 4" TRANSITE LINE 1350 FT. ACROSS THE VALLEY TO THE WEST ONTO A HIGH HILL WHERE A SUMP HAS BEEN EXCAVATED (THE SUCTION LINE OF THE PUMP IS TOO LOW IN THE FIRST POND AND PICKS UP TOO MUCH SEDIMENT). ON THE HILL THE WATER PASSES OVER AERATING RIFFLES AND GOES TO THE EXCAVATED SUMP. THE WATER PERCOLATES HERE TO SOME EXTENT. BROMBERG SAYS THAT THEY HAVEN'T HIT THE BAD WATER IN THE ORE BODY AS YET, BUT WHEN THEY DO THEY WILL ADD LIME FOR pH ADJUSTMENT. BLOMBERG WILL USE THE PRESENT POND, BELOW THE MINE FOR EVAPORATION PURPOSES THIS SUMMER. THERE ARE STILL PROBLEMS, SUCH AS HANDLING OF LIME SLUDGE AND PRECIPITATED SLUDGE, BUT THESE CAN BE WORKED OUT. BLOMBERG SAYS THAT HE IS NEGOTIATING TO GET MORE LAND DOWN BELOW THE PRESENT POND IN DUNN CREEK. HE THINKS HE'LL HAVE MORE ROOM FOR A BIGGER POND.

BLOMBERG SAID THAT HE SAW GIL TO TELL HIM WHAT THE MINE WAS DOING. GIL TOLD HIM THAT IT WAS A MATTER BETWEEN BLOMBERG AND THE POLLUTION BOARD.

THERE OUGHT NOT BE ANY PROBLEM THIS YEAR.

A.J.I. & W.D.B.
APRIL 8, 1955

MEMORANDUM

TO: Colonel J. S. Gorlinski
FROM: L. E. Trumbull
SUBJECT: Mt. Diablo Mine and Marsh Creek Area

On June 30, 1958, I inspected the Mt. Diablo mine drainage and the Marsh Creek area.

The Mt. Diablo Mine is currently leased by Mr. John Johnson. He intends to concentrate ores obtained from surface operations. Mr. Johnson states that he does not intend to go underground for ore, in fact his lease confines his operation to surface ores, and thus he does not plan or need to pump water from the flooded lower workings.

Mr. Johnson states ores will be concentrated on jigs, using water from the mine pond in Dunn Creek. He plans to combine the alkali spring, which enters Dunn Creek below the dam, with acid mine wastes to secure partial neutralization. Final neutralization will be obtained through the use of limestone.

It is planned to pump water from the pond to several small ponds on an upper level. Water is to be recycled from these ponds to process. Mr. Johnson states that any excess water from this operation can be returned to the mine workings through an old stope located nearby.

The dam which holds back the acid waters has recently been reinforced with a number of loads of dirt. Mr. Johnson stated that he had intended to weld a positive closure on the drain pipe, but found the drain line to be corroded beyond repair. He states this line will be replaced as soon as the pond can be emptied.

Inspection of the dam shows it to be retaining the acid drainage at this time. Dunn Creek flows around the pond at a rate of about 100 gpm. Combination of waters below the dam produces a milky color. Dunn Creek flow essentially disappears before entering Marsh Creek.

Property at the junction of Marsh and Dunn Creeks is owned by Mr. Oscar A. Johnson. He accompanied me on an inspection of this area. Marsh Creek is flowing at perhaps 100 gpm. Water appears to be in excellent shape. A large hole exists a short distance below the confluence, and water herein is of sparkling clarity. Downstream area is relatively free of iron stains. Water at Zuur's well was tasted and found to be free of saline flavor.

The Prison Camp maintains a small dam in Marsh Creek and diverts water from this pond for irrigation use. Water in pond was of excellent appearance. Mr. James Short, Deputy Sheriff at the camp, stated that mine wastes had been handled in excellent fashion this year, and that they had no complaints based on irrigation water quality. Their well water is turning salty now. Mr. Short also stated that a geological study, by University of California geologists retained by the Contra Costa County Board of Supervisors, confirmed the existence of deep-lying bad water strata in this area.

MEMORANDUM

TO: Colonel J. S. Gorlinski
FROM: G. E. Schmidt
SUBJECT: Mt. Diablo Mine

On February 26, 1963, I visited the Mt. Diablo Mine in Contra Costa County. I contacted Mr. Vic Blomberg, caretaker, who accompanied me on an inspection tour of the pond and adjacent areas.

The flow from Dunn Creek was entering the pond from the north and the pond was overflowing near the southwest corner with estimated flows of nearly 3 cfs at each of two locations. The former creek flow has bypassed the pond along the east side but, during a heavy storm on January 31, when 11" of rainfall was recorded in the vicinity, the bypass was filled with silt and earth material washed in by storm runoff. Presently no creek flow bypasses the pond. Mr. Blomberg said he has been unable to hire heavy equipment to perform the necessary excavation work, due to muddy conditions at the site and because the owners of such equipment have been too busy with other work. He said that during the past two weeks he has (1) written the representative, Mr. Gersov, of Victoria Resources Corporation in New York to explain the present situation, and (2) pointed out the pond operation difficulties to Engineer Malting, who works for Kaiser and had planned to travel to New York to describe the storm damage in detail. Mr. Blomberg has not received further reply from either Mr. Gersov or Mr. Malting. Mr. Blomberg mentioned that Mr. Gersov often travels abroad and therefore is frequently difficult to contact. Upon further questioning he said that the Victoria Resources Corporation has a legal representative in Los Angeles, a Mr. Nelson.

Mr. Blomberg said an attempt was made to drain the pond during the January 31 storm but the five 6-inch i. d. suction hoses became plugged and water could not be released through the outlet pipe constructed in the dam.

Much earth had been washed into the pond from the west side and in addition to that deposited by heavy flows from Dunn Creek. Because of the large volume of debris it appears that the pond probably has less than half of its capacity before the storm.

Immediately below the dam a flow of approximately 0.2 cfs from a travertine spring up the west slope joined the pond overflow waters from Dunn Creek. For a distance of over $\frac{1}{2}$ mile downstream from the dam the Dunn Creek waters were milky and pale green in color with extensive brown sludge deposits. At least 5 cfs of water was flowing in the creek from Perkins Canyon. At the lower end of Sunshine Camp the flow of Marsh Creek after receiving Perkins & Dunn Creek waters was estimated at 30 cfs. Here the water appeared slightly muddy, but neither color nor brown sludge deposits were apparent.

Numerous slides and washouts were noted along Marsh Creek as a result of the heavy storm. Extensive flood damage was reported at Marsh Creek Springs; minor flood damage occurred at Marsh Creek Lodge.

cc: Mt. Diablo Mine

3/1/63 ges

MEMORANDUM

TO: Colonel J. S. Gorlinski
FROM: T. L. Fenner

SUBJECT: Requirements Checking, Mt. Diablo Quicksilver Mine

On March 21, 1962, I visited the Mt. Diablo Quicksilver Mine to ascertain compliance of the discharge with the Board's requirements. Mr. Vic Blomberg, Caretaker, was contacted.

Mr. Blomberg informs me that the Victoria Minerals Company, a New York outfit, has bought approximately 100 acres of the old mine and have an option on an additional 25 acres in which the pond is situated. Additionally they have indicated an interest in purchasing 43 more acres, thus leaving Mr. Blomberg with 2 acres. Actually, start up of the old Mt. Diablo Mine is probably dependent upon the market value of quicksilver, thus a sudden upsurge in the price of quicksilver might get things moving at this mine.

Presently the pond appears to be about 1/2 full or have about 2 feet of freeboard left. Mr. Blomberg indicated that he drew the pond down as much as possible during recent heavy flows. A check of Marsh Creek downstream indicated no sludge deposits, as in the past and the pH meter gave a reading of 6.8 at Sunshine Camp, Marsh Creek Springs and Marsh Creek Lodge. However, I suspect the meter was not entirely accurate.

In view of the absence of normal brown color sludge deposits in Marsh Creek downstream of the pond I believe the Mt. Diablo Mine waste discharge has been in compliance of the Board's requirements during recent months.

TLF
4-11-62

cc: Mt. Diablo Mine

OFFICE MEMORANDUM

TO: Colonel J. S. Gorlinski
FROM: L. E. Trumbull
SUBJECT: Mt. Diablo Quicksilver Mine, Contra CostaCounty

On March 16, 1961, I visited the subject mine and discussed local water conditions with several concerned parties. Mr. Sam Sagara, of the Contra Costa County Health Department, accompanied me on this trip.

Information gathered from local parties is briefly described here:

Vic Blomberg — Mr. Blomberg reports that the Mt. Diablo Mine has been sold to Victoria Resources Corporation, a Texas company represented by Mr. George Nilsson of 510 West 6th Street, Los Angeles 14, California. Blomberg reports that research on improved mercury extraction methods is underway at Stanford Research Institute, and that research findings may lead to construction of new mining and ore processing facilities.

While 100 acres of mine property has changed to new ownership, Mr. Blomberg states that he remains the owner of the Dunn Creek meadow area, which includes the existing waste water pond. Mr. Blomberg states that, under agreement with Vistoria Resources, he is to continue maintenance of the pond facilities.

About March 12, 1961, Mr. Blomberg released about 4 inches of water from the surface of the pond. He stated that this water was clear and that it "tasted OK". This release was necessary, according to Mr. Blomberg, because the pond was nearly full and about to overflow.

Mr. Gill, Marsh Creek Lodge — Mr. Gill reports that Marsh Creek has not carried any appreciable flow this winter, and that to his best knowledge, the Creek had not been discolored at any time this winter in the reach through his property.

This resort is now being developed by a private club, and the major swimming pool is well above the Creek. It is fed by spring water. A golf-course is being constructed by the resort along Marsh Creek just downstream of the Resort.

Mr. Jackman, Marsh Creek Springs — This resort is in receivership with Mr. Jackman acting as caretaker.

The swimming pool, which is a dammed-up section of Marsh Creek, has clean blue walls, with no visual evidence of stains due to this winters flows. Flow in Marsh Creek was estimated at 1/2 cfs through the pool, and water was quite clear. Mr. Jackman indicated that only clear water had been observed in Marsh Creek this winter.

Contra Costa Prison Farm A deputy discussed the quality of drinking water w ith us, and was quite emphatic about taste in the water being associated with releases from the mine pond.

He reports that their water supply is taken from 3 wells, with pumping being performed by one of the trusties. He indicated that there was no way of knowing which well was being used at any particular time.

Manuel Mendoza, Caretaker of Howard Ranch The Howard Ranch includes much of the Marsh Creek area above the confluence of Dunn Creek. Mr. Mendoza has lived in this area since 1928. He reports that salt springs were prevalent in the Mt. Diablo Mine area long before mine operations started. Spring waters were alkaline in nature however, and the typical red iron deposits and sludges, so prevalent in recent times, were non-existent in these earlier days. Mr. Mendoza reports that red-colored waters developed after the extensive development of the Mt. Diablo Mine.

Water Samples were collected at the following points:

(1) Marsh Creek at Morgan Territory Road on Howard Ranch and above the confluence of Dunn Creek.

Water was clear with mossy growths. Stream bed free of iron stains. Flow estimated at 200 gpm.

(2) Dunn Creek at Morgan Territory Road below waste pond. Water turbid and orange colored. Flow about 100 gpm. Light flocculent precipitate lying in stream channel.

(3) Alkali Spring, East of Waste reservoir dam. Very slightly turbid; yellow cast; flow about 20 gpm.

pH of this spring was about 9.6. A few yards to the north is an acid seepage, perhaps 10 gpm, with pH of about 2.5. A brief reconnaissance across the West slope above the waste pond reveals numerous alkaline seeps with drainage from overlying waste rock apparently contributing acid seepage. The combination of these waters is building a continuous sheet of precipitated material over portions of this slope.

(4) Mine waste pond.
Pond nearly full; water has slight turbidity with a brownish cast.

(5) Dunn Creek; near pond but above dam.
Flow about 100 gpm. Slight turbidity with a yellowish cast. Dunn Creek is clear and clean above the mine property, however a small tributary draining from the northerly slope of mine workings contributes the color and turbidity noted in this sample.

(6) Marsh Creek at Contra Costa Prison Farm Road. Water is slightly turbid with a faint yellowish color. Stream bottom has some reddish flocculant deposit, and rocks have a typical iron stain. Red iron stains and precipitates become much more evident as one goes up Marsh Creek from the Prison Farm.

Recent complaints from the Marsh Creek area have been concerned primarily with taste in domestic water supplies, alleged to occur when mine area waters penetrated the ground water to reach local domestic wells. There have been no complaints from this area in recent times based upon nuisance conditions.

Waste discharge requirements were adopted for the Mt. Diablo Mine, in Resolution No. 135, on 15 May 1952. On 14 December ~~1953~~ 1953 the Central Valley Regional Water Pollution Control Board found, after a public hearing on the matter, that the Mt. Diablo Mine wastes constituted a nuisance, and correction was ordered. The Board's order also states; "That should Respondents fail to comply with the provisions of said Resolution No. 135, and to correct said nuisance, the undersigned Board shall certify the facts to the District Attorney of Contra Costa County - - -". On June 24, 1954, the Board's order was further defined in an official statement by the Board, wherein is contained this statement: "After study of the mine operation and downstream uses of Marsh Creek this Board has come to the conclusion that judicious discharge of the mine waste to Marsh Creek during the period when Dunn Creek and Marsh Creek have sufficient flow to prevent unsightliness would be reasonable and would not violate the spirit of the Board's order and at the same time would conserve waste water storage for use during the period of low flow mentioned above."

My inspection on March 16, 1961, did not reveal nuisance or unsightliness, as the terms are defined in the California Water Pollution Control Act. As this has been an extremely dry year, as reflected in minimum flows in Marsh and Dunn Creeks, opportunities for disposing of pond wastes have been quite limited. The release of a small amount of pond wastes on March 12, 1961, appears reasonable, in the light of Board policy, in order to maintain control of pond wastes.

- - - - - - - - - -

The "salty" tastes of ground waters, and the taste relationship to Mt. Diablo Mine waste waters is a rather complex question. In a report on the Marsh Creek area dated January, 1952, the California Division of Water Resources makes several interesting deductions:

"- - - the public health standard for chlorides was exceeded at three of five wells in the Cretaceous, at two of seven wells in the alluvium upstream from Dunn Creek, and at four of eight wells in the alluvium downstream from the confluence (of Dunn Creek). - - It is probable that complaints stem largely from the presence of too high concentration of chloride ion."

"- - - changes in quality of the groundwater which occur below the confluence of the streams (Dunn Creek and Marsh Creek) are probably in part due to mine wastes in the stream and in part to infiltration to the alluvium of water from the Cretaceous formation"

"The volume of alluvium bordering Marsh Creek is so thin and narrow that significant dilution of a mineralized percolate from the Creek after it has reached the water table is improbable."

Analysis of the samples collected on March 16, 1961, in the Marsh Creek area show:

	pH	Cond	Ca	Mg	SO_4	Cl	NO_3	B
(1)Marsh Creek above Dunn Cr.	8.3	381	35	16	23	24	0.3	0.2
(2)Dunn Creek below mine pond.	7.3	2,630	98	131	680	360	5.7	17
(3)Alkali Spring below dam & pond.	8.0	15,690	163	295	1,480	4,230	14	233
(4)Mine pond	3.0	10,060	360	523	4,540	1,610	2.4	80
(5)Dunn Creek above mine pond.	7.5	1,260	90	98	506	67	1.8	2.4
(6)Marsh Creek @Prison Farm.	7.6	2,270	156	93	462	363	7.7	14

If it is true that excess chlorides are the prime cause of domestic water complaints, and that release of mine waters to Marsh Creek results in entry of these wastes into domestic wells, then it would appear quite likely that Dunn Creek waters, including mine water releases, may be the cause of tastes in downstream water supplies.

Another interesting conclusion presents itself here, however, and that is that high chloride concentrations are the result of natural springs from the Cretaceous rock formations, and are not a result of mining activity. The alkali springs shown in the above analysis, for example, does not lie on Mt. Diablo Mine property, but belongs to the adjacent ranch. Similar springs of alkali water may be observed seeping from under the waste rock piles of the Mine.

Iron and sulfate waters are characteristic of sulfide ore mines, and water of these characteristics is present in the mine pond. Seepage of such mineralized water has resulted in "paving" of the west slope, above the mine pond, with a gypsum coating ($Ca,(OH)_2 + H_2SO_4 = Ca\ SO_4 + H20$)

These conclusions are in line with the history of the area, which indicates extensive mineral springs existed prior to mining activity. The red colors now prevalent, however, are the product of mining activity.

While sulfate salts and other solubilized minerals resulting from mining operations have made a certain contribution to ground water deterioration, it appears likely that complaints of recent years are due in major part to overdraft on the very limited supply of good water in the alluvium. This overdraft promotes percolation of mineral surface waters as well as enhancing infiltration of subterranean saline waters from underlying cretaceous formations.

- - - - - - -

In order to document periods of high taste, and establish formally a relationship with mine water releases, it was suggested that the Prison Farm post a "Comment" sheet near the water fountain, wherein date and specific complaints could be noted.

As an aid in this correlation, the Farm will attempt to set down data on precise location of each of the three wells, particularly in relation to Marsh Creek. Depth to water table, relation of table to Marsh Creek flow, cased depth, log of formations encountered in drilling the well, are all useful information which should be set forth.

Water samples from Marsh Creek and from specific wells should be collected periodically and analyzed for chloride, sulfate, and boron to further document influence of Marsh Creek waters.

Mr. Sam Sagara, of the Contra Costa Health Department, indicated he would seek to carry out this program.

If such program demonstrates positively that Mt. Diablo pond wastes are a major cause of ground water deterioration; then this office will have a basis for further action. Current information, however, leads to the belief that such a finding will not develop.

5-4-61 LET

Exhibit 9

Mt. Diablo Quicksilver Mine
(Mining and Industrial News)
February, 1954

JONAS LEASES DIABLO MINE FROM BLOMBERG

In the January number it was stated that Bradley Mining Company of San Francisco was owner of Mt. Diablo Quicksilver mine near Clayton, Contra Costa county, Calif., where DMEA exploration project is under way. This was incorrect; the Bradley Mining Company formerly held a lease on the mine but more recently the property has been operated under lease by Ronnie Smith, from the owner, Mt. Diablo Quicksilver Co., headed by Richard Blomberg. Present leaser is John Jonas of San Jose, Calif.

Exhibit 10

C/3541/38-1

DMEA-2448

COPY

C. N. SCHUETTE
Consulting Mining Engineer
6390 Barnett Valley Road W.
Sebastopol, California

March 5, 1954

Mr. H. C. Miller, Executive Officer,
DMEA Field Team, Region III, U.S.B.M.
1012 Flood Building, 870 Market St.,
San Francisco 2, California.

Dear Mr. Miller:

In response to Mr. Mittendorf's wire of 3-1-54 I submit the following data on the estimated cost of dewatering the Mt. Diablo mine.

At Mt. Diablo mine the 300 level crosscut from the shaft was getting near the point where we expected to get water from the shattered rock of the ore zone. Preliminary estimates had placed thispoint at 125 feet or possibly somewhat further from the shaft as the dip of the vein wasknown to become steeper in depth and this would extend the distance. At this point where water from the vein or ore zone could be expected in the crosscut, the face of this crosscut was still over 100 feet (horizontal measurement) and possibly 20 to 30 feet lower, from the bottom of an old winze, the hearest of water filled workings of the old mine.

No one saw the face of the crosscut after the last round which advanced the face to 120 feet. The previous round to 116 feet was in sandstone and the face was bone dry tho there was a small seepage accompanied by a smelly gason the left side of the crosscut at about 112 feet in from the shaft. The last round was fired at 4 P.M. on February 17th. That night at 8 P.M. the cage was run up and down the shaft for purposes of testing a new brake lining and everything appeared normal.

On the morning of the 18th at 8 A.M. the water had risen in the shaft to 30 feet above the station and rose 70 feet more in another hour. Figuring back, the time required to drown the sump, crosscut and 30 feet of shaft above the level, it seems probable that water had burst into the workings with a rush starting about 5 A.M. on the morning of February 18th. The water continued to rise in the shaft until it reached the level of the old drain tunnel of the mine.

A pump was obtained and pumping was started at the rate of about 400 g.p.m. on Monday February 22nd. Pumping stopped on Feb. 25th. In this period the water had been lowered 38 feet.

(Newspaper article attached to this report, dated March 5, forwarded with original letter by Schuette to Mails & Files for docket.)

It had been expected that some water might be encountered during the last 60 feet of shaft sinking and in the crosscutting. Surprisingly enough, practically no water was encountered in the shaft sinking aside from a few minor seepages and a small seepage in the bottom of the shaft. The crosscut also was dry and a sump pump available for such work, was never used.

As the water was pumped down in the shaft, the flow of water from the drain tunnel diminished and practically stopped, showing that any pumping from the shaft will drain the old mine of water.

The question is: how long will it take and what will it cost? Aside from the volume of water to be pumped out, there are certain other considerations which are:

1. While the water pumped at first was not acid, the water flowing from the drain tunnel is acid in character and the water pumped from the shaft will be acid water as pumping proceeds.

2. The Water Pollution Board of the State of California requires that this water be neutralized and clear before being released into the creek.

3. General Considerations: Rainfall. On the day before the water break-out, i.e. on February 17th it was storming and raining hard all day. This may have had something to do with the break-out as heavy rains always affected the amount of water pumped during previous operations. In the dry season the water pumped from the old mine was roughly 100 g.p.m. as against 200 g.p.m. in the rainy season. The rains for this season are practically over, so that chances for sudden increases of water in the mine are slight from now on into the summer.

The mine water in the old workings stands a little above elevation 790, the portal elevation of the 165 or drainage level. Below the 165 level there is the 270 level at elevation 708. This level is some 190 feet long. Two inclined raises connect the 165 and the 270 level and for some 70 to 90 feet slope measurement below the 270 level to an elevation of 655 or possibly 637 feet. Available maps do not agree on elevations and the original survey note books have not thus far been located. The amount of stoping between the 165 and 270 levels is not shown on any available map.

During previous operations, or rather intervals between operations, the lower workings have filled with water. On one occasion the water was pumped down (250 g.p.m. pump) from 15 feet above the 165 level to clear the 270 level in about one weeks time. In the summer the winze only, could be pumped down from the 165 to the 270 level in one day with the sampe pump.

Our present corsscut is a short distance below the bottom of the old winze, so that we have a greater depth of rock to drain and after pumping down, a somewhat greater flow of water can be expected than in previous operations, which as mentioned above varied from 100 to 200 g.p.m.

As the present unwatering operation proceeds, the shaft timbering will have to be caught up as the water is lowered. I would extimate that the crosscut level can be recovered in not more than 30 days of pumping with the pump now operating; with luck, it might be done in two weeks.

Pumping down must be done on a 24 hour per day basis. Three men are needed per shift with one extra man per day to run errands and be a general service man. Thus 10 men per 24 hours at $2.00 per hour would entail a labor cost of $160 per day. Power would take 40 HP x 24 = 960 HP hours per day. At prevailing power rates for a 15 day period this would cost $13.58 per day while for a 30 day period it would be $11.01 per day.

A rough estimate of the cost of unwatering would be:

$160	labor
14	power
16	lumber and misc. supplies

Total $190 per day

Thus the direxT cost would probably be not less than $2850 and not more than $5700.

To this cost must be added the cost of facilities to treat the water. This additional cost is not due to the flooding but is made necessary by the orders of the Water Pollution Board.

In former operations, lime was fed to the intake of the pump to neutralize the acidity and the water was then pumped up the hill to aerating tanks and then dispersed over the hillside. This system, the apparatus for which is no longer in existence, gave satisfaction for a 3 year period. It may or may not serve now as farmers and resort operators below the mine have been bringing suits and complaints against the mine for water pollution in late years and the subject has become acute with the Water Pollution Board insisting on compliance with their rather strict regulations.

Thus the treatment of acid water pumped from the mine becomes imperative and since such a treatment plant involves pumps, pipes, baffle troughs and similar equipment, an expenditure of another $5000 or so will probably be needed.

Even then there is the constant threat that an order of the Pollution Board might enforce a stoppage of pumping, and this of course would result in flooding the mine again.

Summing it all up, I would estimate that the unwatering and recovery of the 300 level would take some 30 days and would cost some $10,000.

In feet of drifting, $10,000 represents 250 feet of drifting at $40 per foot. Thus if the operators could trade this expenditure for unwatering for 250 feet or one half of the proposed drifting, that would help them over their present difficulties.

Later, if the drifting showed encourageing results, perhaps the contract could be amended to add 250 feet of drifting and so enable the operators to complete the project as originally set up.

Very sincerely yours,

/s/ C. N. Schuette